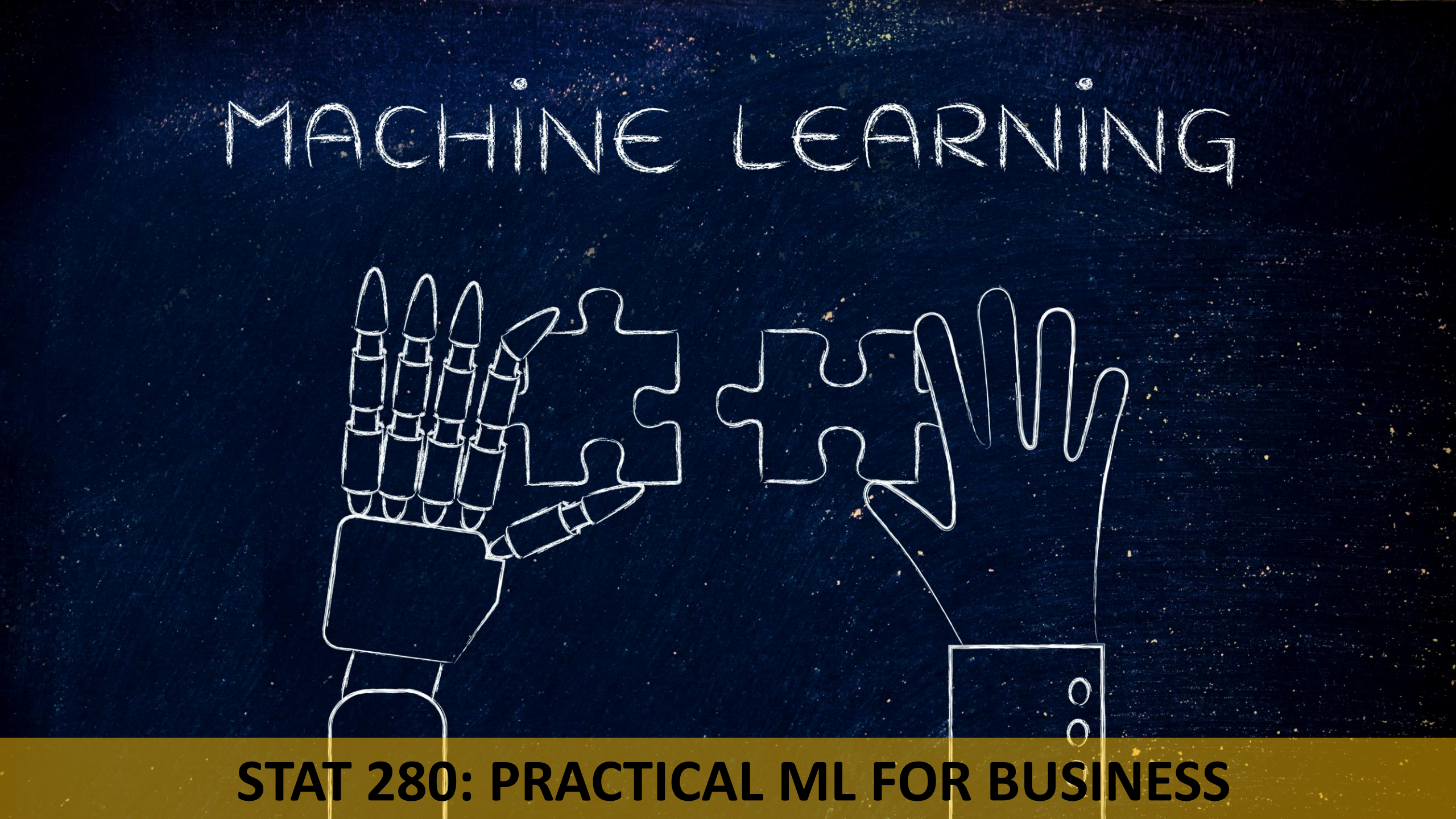

STAT 280: PRACTICAL ML FOR BUSINESS

ACADEMIC INTEGRITY

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Week 1: Introductions

- Class Introductions and expectations setting
- Course outline and project overview
- Anaconda installation overview

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About the Instructor

Joby Batiller

- Data Scientist, Gcash (2019)
- > 5 years in Machine Learning
  - Primarily focused on Risk/Fraud
  - Identity resolution
- 5 years instructor in ADMU
- MS Eng’g Math from UoB
- BS PSMSE from ADMU

Introduce Yourself

- Name
- Current job & company
- What new hobby/life realization did you pick up ~~during~~ after the pandemic?

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Stat 280 Course Outline

Week	Date	Topics
1	Jan 20, 2025	0. Introduction • Course outline and project overview • Anaconda installation, GitHub, Slack overview
2	Jan 27, 2025	I. Overview • Introduction to AI/ML • Data Science Lifecycle • Use Case Introduction
3	Feb 3, 2025	II. Jupyter Notebook and Python Basics • Jupyter Notebook introduction • Python 101
4	Feb 10, 2025	III. Use Case 1: Fraud Detection (Supervised) • Understanding Fraud Types • Fraud Detection Techniques • Modeling & Evaluation • Scoring & Deployment & Monitoring

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Stat 280 Course Outline

Week	Date	Topics
5	Feb 17, 2025	IV. Use Case 1: Fraud Detection (Unsupervised) • Data Exploration & Pre-processing • Anomaly Detection • Clustering • Social Network Analysis (SNA)
6	Feb 24, 2025	V. Use Case 1: Fraud Detection (Hands-on) • Data Exploration & Pre-processing • Random Forest • Predictive modeling & Evaluation
7	Mar 3, 2025	VI. Use Case 1: Fraud Detection (Hands-on) • Data Exploration & Pre-processing • Anomaly Detection • Predictive modeling & Evaluation

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Stat 280 Course Outline

Week	Date	Topics
8	Mar 10, 2025	VII. Use Case 2: Recommender Systems • Types of Recommender Systems • Evaluating Recommender Systems • Deployment • Case Studies
9	Mar 17, 2025	VIII. Use Case 2: Recommender Systems (Hands-on) • Data pre-processing • Modeling & Evaluation • Generating Predictions
10	Mar 24, 2025	IX. Use Case 3: Conversational Chatbot • Bot Introduction • Major Use Cases • Bot Building Overview • NLP & NLU Overview • Use Case Discussion

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Stat 280 Course Outline

Week	Date	Topics
11	Apr 7, 2025	X. Use Case 3: Conversational Chatbot (Hands-on) • Rasa Installation • Concepts Review • Rasa Introduction • Hands-on
12	Apr 21, 2025	XI. Use Case 3: Conversational Chatbot (Hands-on cont) • Production Considerations • Connecting to Slack • Chatbot Analytics • Other Topics
13	Apr 28, 2025	Hackathon Day 1
14	May 5, 2025	Hackathon Day 2
15	May 12, 2025	Demo Day
16	May 17, 2025	Demo Day (Delayed)

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Hackathon & Demo Day

- Final project is 30% of final grade
- Work in trios (each with assigned roles)
- For the hackathon, you will have access to various datasets wherein you will pick one, and applying 1 or some of the ML algos we have studied, and come up with an industry specific use case
- Demo day – 15 min presentation and 5 min Q& A
- Panel of Industry Judges
- Winner of Demo Day will get 100% for Group Project Score

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Class Policies

- No exams! ☺ ☺ ☺
- Required forum discussions (4 *discussions – post and 2 comments, 25 points each)*
- Required technical graded assessments (*1 for each use case*)
- Participation in class discussions
  - Camera open at beginning of the class
  - Class picture end of class for attendance
  - It is expected that you will read the LO beforehand to prepare for discussions during synchronous sessions.

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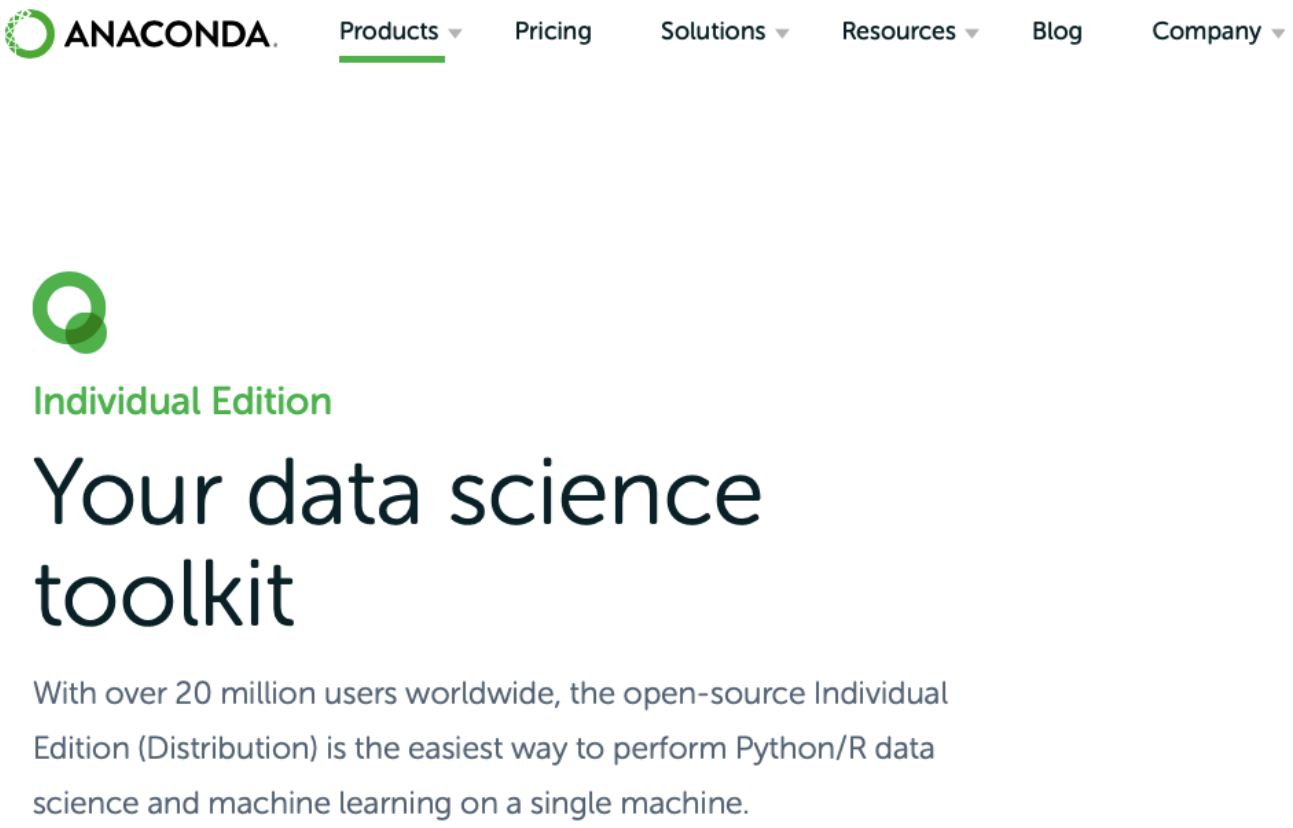
Anaconda Installation Overview



- https://www.anaconda.com/products/individual
- https://docs.anaconda.com/anaconda/user-guide/?utm_source=anaconda.com&utm_medium=individual-get-started
- https://anaconda.cloud/tutorials/8d29a356-46f8-4c5f-9fe8-3b3458b5a252%3Fsource%3Dindividual_tutorial

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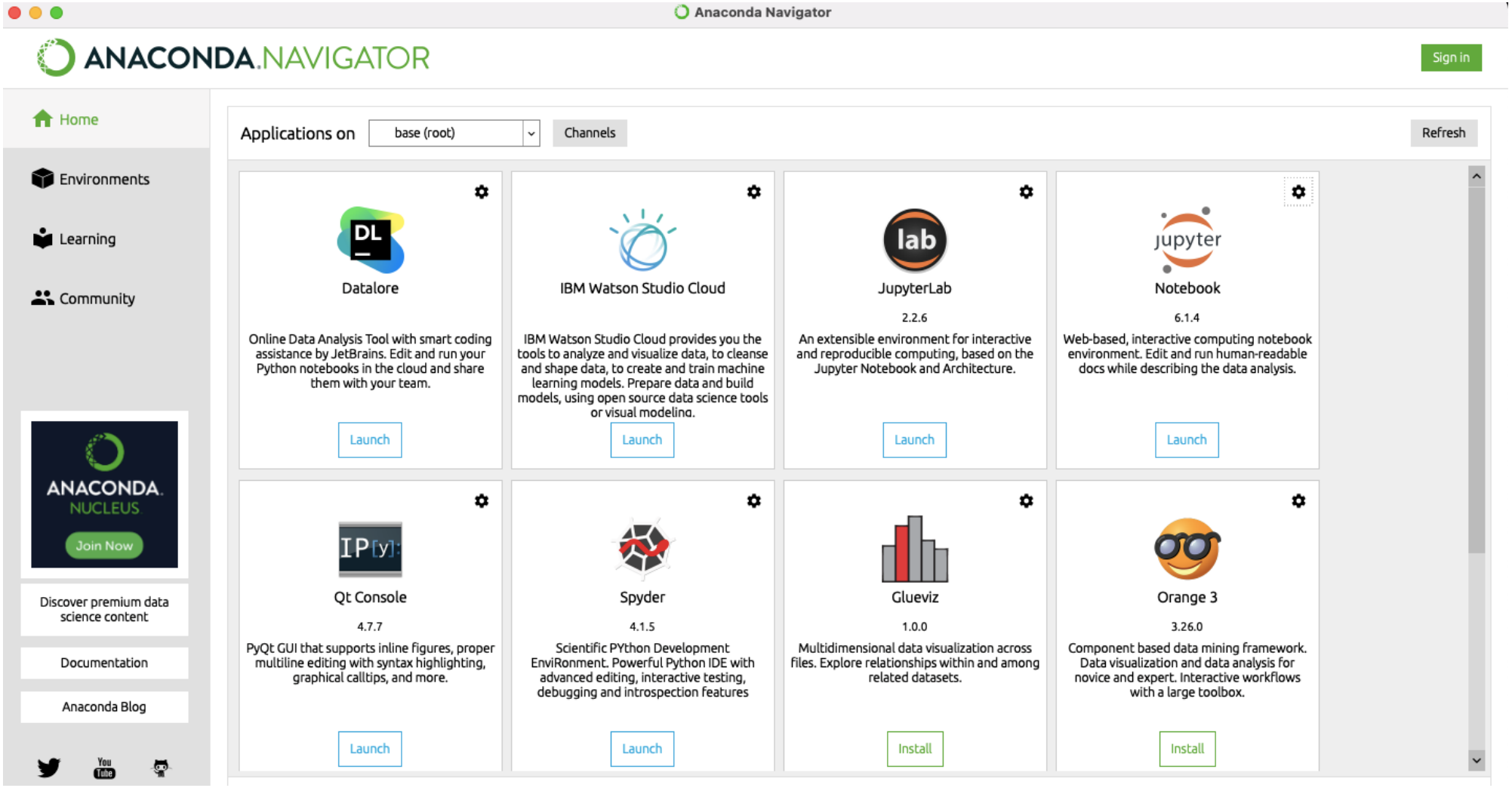
Anaconda Navigator



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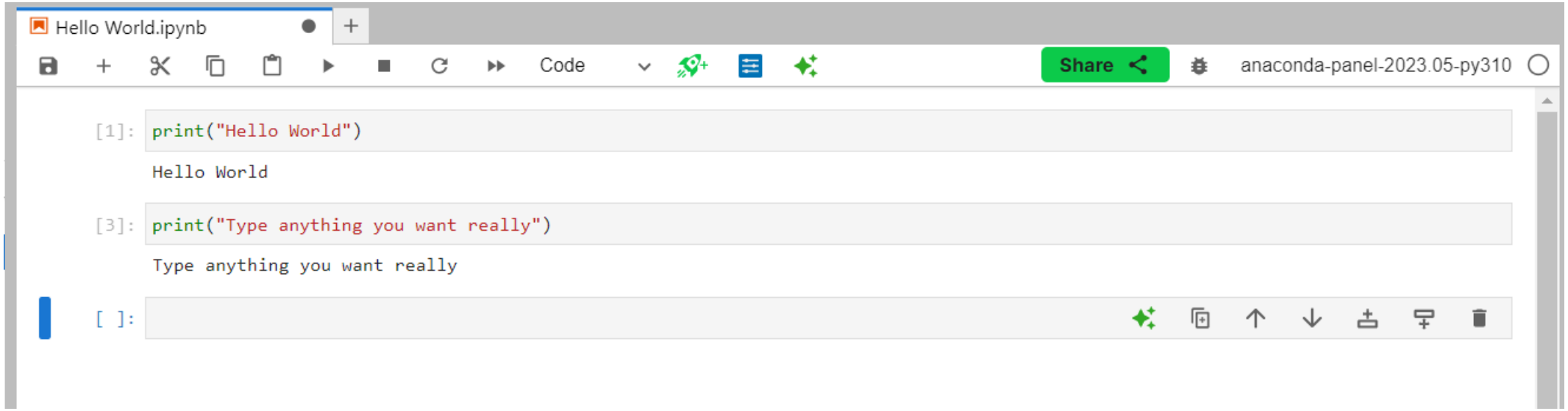
Hello World!



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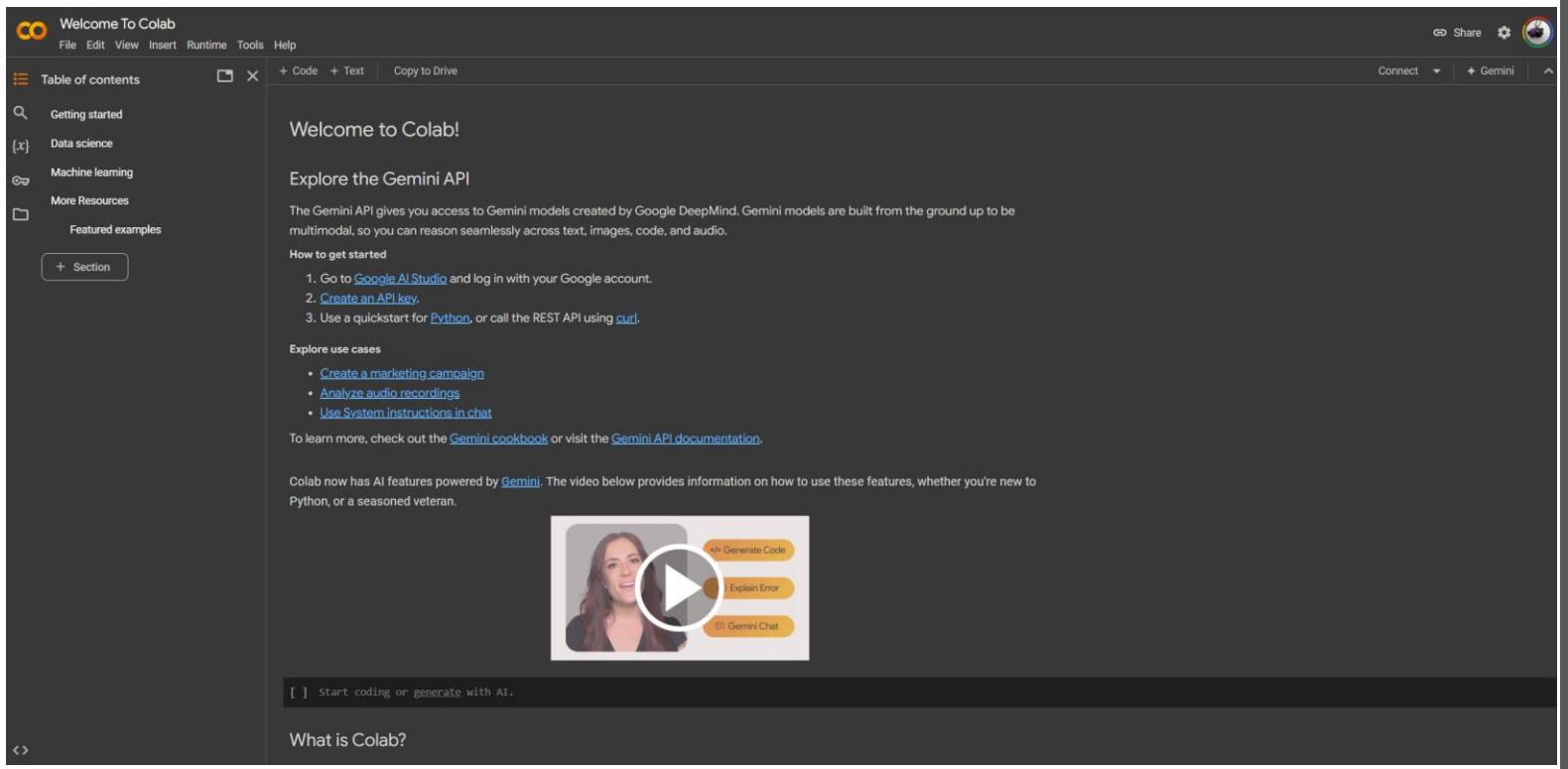
Google Collab



- https://colab.research.google.com/
- Cloud Based Jupyter Notebook Environment
- No setup
- Can link to GDrive

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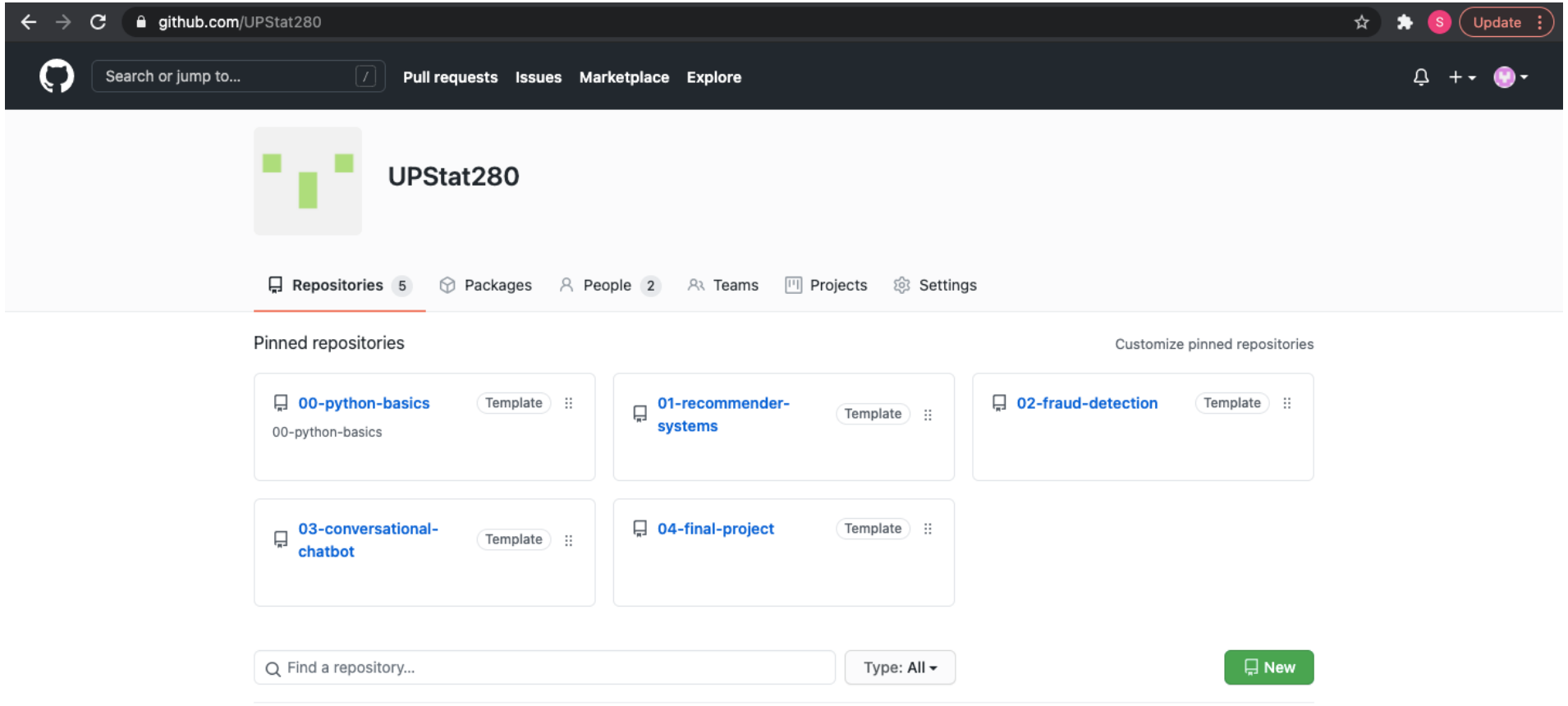
GitHub Code repository

https://github.com/UPStat280

GitHub is a code hosting platform for version control and collaboration.



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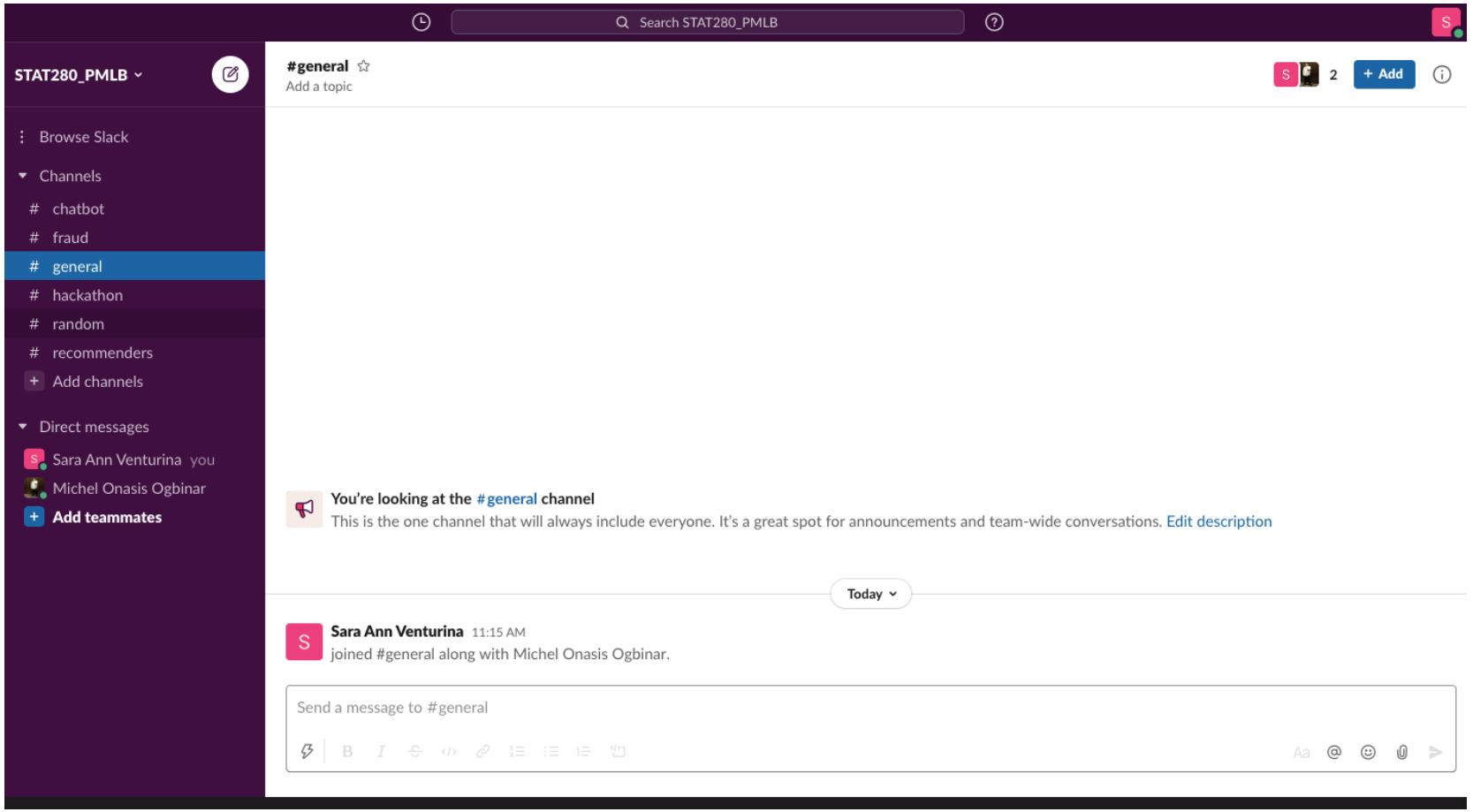
Slack

Slack is a channel-based messaging platform.



👋 Let's move this to Slack! It's a faster, simpler way to talk shop, share files, and work together. You can sign up here: https://join.slack.com/t/stat280mzab2n-wyb6504/shared_invite/zt-2xy7b9hs7-lOKRMkifpvpeBow1T0DRWQ

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Assignment

- Install Anaconda platform on your machine
- Join our Slack channel

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Graded Assessment

- Submit a screenshot of your Hello World program in Slack (unless you can post images on UVLe tell me how)
- Deadline is Feb 3, 2025

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Thank you!

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Stat 280 Additional References

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- Freed, Andrew. Conversational AI. Manning Publications Co, 2021
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